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ABSTRACT

Reacting to a demand for female engineering technicians in Charleston (South Carolina) area industries, Trident Technical College conducted a project to encourage women to study engineering technology, to provide female technicians to local industries, to establish close working ties between the college and local high schools, and to provide for a permanent emphasis on nontraditional careers for women at the college. The project consisted of a public awareness campaign, specialized recruiting and testing, a summer quarter of special pre-engineering technology and mathematics courses for a selected group of high school women, and an orientation of the ergineering technology faculty to the special problems and potentials of women students. During the project year female enrollment in the engineering technologies rose from six percent to thirteen percent of the total enrollment. Seventy-four women were enrolled in the spring 1978 quarter, representing an increase of ninety-five percent over the enrollment of thirty-eight women in the spring 1977 quarter. Preliminary evaluation indicated that all objectives were being or would be met. It was concluded that there are a large number of women in high school and already graduated who are willing and able to embark on careers in engineering technology and who could benefit by being introduced to careers normally considered nontraditional for females. (Appendixes include examples of publicity about the project, student and faculty evaluations, activity schedules, and lists of speakers.) (LMS)

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ED160829

FINAL REPORT

PROJECT NO. 78-1450

FEMALE ACCESS TO CAREERS IN ENGINEERING TECHNOLOGY

EXEMPLARY PROJECT IN VOCATIONAL EDUCATION

CONDUCTED UNDER SECTION 132 OF

PUBLIC LAW 94-482

The Project reported herein was performed pursuant to a grant from the Office of Education, U.S. Department of Health, Education, and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgement in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

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AUGUST 31, 1978

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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SUMMARY

Time Period: This final report of the Female Access to Careers in Engineering Technology (FACET) project covers the time period July 1, 1977 through August 15, 1978.

Objectives: The goals were to encourage females to study Engineering Technology, to provide well paid female technicians to local industries, establish close working ties between Trident Technical College and the local high schools, to institute the team teaching concept into the Engineering Technology Division, to provide for a permanent emphasis on non-traditional careers for women at the College, and to see the project replicated at at least two other two-year colleges.

Procedures Followed: During the project year public awareness materials for females in Engineering Technology were developed and disseminated throughout the three counties served by Trident Technical College. The Project Director gave presentations at most area high schools and at several community meetings. The Project Director met individually with women interested in enrolling in the Engineering Technology Division, kept track of their progress once they were enrolled, and organized monthly meetings for them on topics of general interest. Faculty and Staff in the Engineering Technology, Arts and Sciences and Student Services Divisions planned the curriculum for the Careers in Engineering Technology course sponsored by the project. An application procedure for the course was developed, an admissions committee appointed, and female high school students were selected to participate in the summer program. Three consultants were brought in to work with the faculty on detecting and dealing with sex bias and sex role stereotyping. The special

introductory course as well as remedial mathematics courses were offered for the participants during June, July and August. Staff and student surveys were used to evaluate the program.

Results: During the project year female enrollment in the Engineering Technologies rose from 6% to 13% of the total enrollment. Seventy four (74) women were enrolled in the Spring 1978 quarter. This represented an increase of 95% over the enrollment of 38 women in the Spring 1977 quarter. Eighty four (84) females enrolled in the summer 1978 quarter Careers in Engineering Technology course, and of the thirty four (34) participants eligible to enroll in college in the fall of 1978, twenty two (22) (65%) plan to study engineering or engineering technology. A model interdisciplinary curriculum for the Careers in Engineering Technology course was developed, as was a model plan for educating the public about careers for women in Engineering Technology. The project film "Make Something Happen" received local and regional awards for excellence and was disseminated to thirty four (34) institutions in fourteen (14) states. Tri-County Technical College in Pendleton, S.C. and Greenville Technical College in Greenville, S.C. have already replicated parts of the project and other South Carolina technical colleges have indicated their desire to do so as well.

Evaluation: The evaluation of the project is by necessity somewhat sketchy because most project goals are at least two years from completion. For this reason it was decided to postpone an outside evaluation of FACET until enough time has elapsed to establish a clear trend of enrolling and graduating increasing numbers of female engineering technology students. (Funds earmarked for an evaluation consultant were used instead to bring a consultant on sex bias and stereotyping to work with faculty.) Preliminary indications are, however, that all objectives of the project are being met. Increasing

numbers of women are enrolling in Engineering Technology curricula. Increasing numbers of women will soon graduate from Engineering Technology programs and will be working in area industries at salary levels above graduates from traditionally female-oriented programs. Close working ties have been established between the College and area high school counselors. Collaborative planning and team teaching utilizing student services staff and instructional staff have become an integral part of the Careers in Engineering Technology course. The College is firmly committed to a permanent emphasis on women in non-traditional careers. Replication of at least parts of the project in other two-year colleges is assured.

Conclusions: Clearly there are a great many girls and women who can benefit from a project such as FACET by being introduced to careers normally considered non-traditional for females. Introductory courses are an effective means of interesting women in these areas, but equally important is a community outreach effort. A public awareness campaign must be used to educate people about the realities women face in the work force today. Introductory courses should utilize experiential laboratory activities and should give participants the opportunity to see and meet women at work in non-traditional careers. Support services such as tutoring and counseling should be readily available to all participants. The time is right for technical institutions to make a serious commitment to broaden the career options of women.

THE PROBLEM ADDRESSED

The problem simply stated was that there was a demonstrated demand for female engineering technicians in Charleston area industries, yet none were available. At the same time women comprised the largest target group of unemployed and underemployed people in the area. In theory it ought to have been a simple matter to inform females about this situation and enroll them in Engineering Technology programs. Strong social forces, however, still are preventing women from embarking upon careers considered non-traditional for females. This remains particularly true of engineering where 99% of the engineers and technicians in this country are male.

A review of the literature shows that:

... Of all women in the population of the usual working age (18-64), half are working.

... The likelihood of being a worker is even greater for women of minority races...their participation rate is 58%.

... Two out of every three women who work are in sales, services, clerical or domestic work--all are low-paying occupations.

... Women suffer higher unemployment rates than men.

... Most women workers (six out of ten) are married and living with their husbands. The rest of the woman labor force is about equally divided between single women and those who are widowed, divorced, or separated. Their average age is 39 years.

... More than two out of three women workers today have at least a high school education; one out of ten is a college graduate. Women workers are equally qualified with men workers in educational attainment.

... Despite educational attainment, fully employed women continue to earn less than fully employed men. The median earnings of women is 59% that of men, which is due largely to the high concentration of women in low-paying occupations. (Note: fifteen years ago she earned 69% of the male salary)

... One of every ten 17-year old girls is a mother.

... Nearly one-third of all teenage marriages end in divorce.

... One of five marriages is broken.

... One child in six will lose a parent by divorce by the time he or she is 18 years of age.

... Approximately 10% of all school-age children have moderate to severe emotional problems.

... Nearly 26,000,000 children are represented by 12.7 million working mothers, 5.5 million of these children are under six years of age.

... Twelve per cent of all families are headed by women...53% of these women heads of households are in the labor force; their median income is $5,114.

... Only about 8% of group day-care centers provide truly developmental day care; only about 21% provide limited developmental care; few family day-care homes offer developmental opportunities; two-thirds are custodial care only.

These statistics will continue to be perpetuated as long as sex role stereotyping is pervasive in society. The book Emerging Woman - Career Analysis and Outlooks, edited by Samuel H. Osipow, details several of these stereotypes:

Stereotype #1: Women's abilities are different from men's.

Stereotype #2: Women should want to be homemakers.

Stereotype #3: Women with careers are poor homemakers.

These three (3) ideas are continuously reinforced throughout the American social structure. Schools use texts showing limited roles for women and provide counseling which channel girls into a few narrow careers. Women themselves express anti-feminist attitudes. Women look to their husbands and boyfriends for guidance in career planning when they ought to look within themselves for their own talents and interests. Occupations are so sex-typed that women are exposed to few role models in non-traditional careers. Support systems which would assist women's work and careers (e.g. adequate day care facilities, financial aid for part time students) do not exist. Even when women do embark upon careers they often experience "role overload" in that they are expected to be spouse and homemaker and lover and breadwinner. These roles need to be shared by both partners rather than assumed by one "superwoman".

In summary, women's career development is burdened by individual and social factors that discourage career participation. These barriers are rooted in attitudinal biases, and consequently are difficult to change.

While this project was not designed to solve all these nationwide problems, it certainly had to address them. Local factors played an equally important role in its development. Unemployment rates in the area served by TTC are consistently higher for females than for males by about four percentage points. For those women who do have jobs in the area, most are employed in the traditionally female occupations of clerical, sales, and service work. Trident Technical College has perpetuated this trend by graduating women from the female-oriented programs of Allied Health and Secretarial Science and men from the male-oriented occupations of the engineering technologies. The graduates of the "female programs" generally earn starting salaries in the $5,000 to $6,000 range. In contrast, the mostly male graduates from the engineering technology division can expect starting salaries of between $9,000 and $13,000.

Trident Technical College has received an increasing number of inquiries from local businesses and industries concerning the need for female graduates in the engineering technologies. This can in some measure be attributed to the federally mandated Affirmative Action Programs, but is also indicative of enlightening attitudes towards the utilization of females in jobs formally considered non-traditional for women. The placement officer at the College has estimated he could place at least 50 female graduates immediately, yet virtually none have been available. This too is in line with nationwide trends which show that only 1% of engineers and engineering technicians are female.

While the Employment Security Commission, Manpower Skills Center, Vocational Educational Training Centers, Trident Technical College, and the industries themselves have all been aware of the problem, there had been no concentrated effort specifically directed at facilitating the entry of females into the engineering technologies. Thus an extraordinary effort was required to overcome the image of engineering technology as a "for males only" profession.

PROJECT OBJECTIVES

Seven project outcomes were expected:

Objective 1: Trident Technical College will better serve its community by providing approximately 35 female engineering technology students per year to the labor market.

Objective 2: Industries in the Trident Technical College service area will have approximately 35 female engineering technology students per year from which to select employees.

Objective 3: The female graduates from these programs will enjoy a higher income than their female counterparts in other programs and will thus encourage other females to seek employment in engineering technologies, or in other non-traditional areas.

Objective 4: The capacity of Trident Technical College to work with local high schools in facilitating the transition of female students from the secondary schools into the engineering technology programs will be enhanced as demonstrated by the success of this project.

Objective 5: The institution will have a heightened awareness of the intergration of student services and instructional functions to meet the needs of females within the engineering technology area. This awareness will be gained through the use of team - teaching techniques in 50% of the orientation and instructional sections and collaborative planning for 95% of them.

Objective 6: The success of the project will result in a permanent emphasis on non-traditional careers for females at Trident Technical College as evidenced by enrollment, graduation, and job placement of females in engineering technology occupations.

Objective 7: The project will be replicated in at least two other two-year colleges.

PROJECT ACTIVITIES

The project was designed to provide special support and incentives to a select group of 100 female high school Juniors and Seniors from Berkeley, Charleston and Dorchester counties to assist them in entering the world of work in the engineering technology area. The project consisted of a public awareness campaign, specialized recruiting and testing, a summer quarter of special pre-engineering technology and mathematics courses, and an orientation of the engineering technology faculty to the special problems and potentials of women students.

Public Awareness: The public awareness campaign consisted of a film, poster, brochure, media ads, news coverage, and community talks. The campaign had two goals: to change attitudes and to recruit students. Between July and October of 1978 the Project Director worked with the College's Public Information Office to produce the poster, brochure, and film. The poster and brochure, which can be seen in Appendix A, were built around the theme "Seven Beautiful Careers in Engineering Technology". The film, entitled "Make Something Happen" was also produced through Graham Smith Productions. It ran twelve (12) minutes and featured women in the Charleston area who were either studying Engineering Technology or already working in the field. Television and radio ads were created from the film and used the theme "Make Something Happen In Your Life."

Once these awareness materials were produced they were used extensively throughout the tri-county area. The Project Director showed the film and gave talks in 35 schools and at nine (9) community group meetings. The poster and brochures were distributed at each of these presentations. Approximately 1500 female students, 300 male students, and 300 adults were reached in this manner. In these talks the Project Director always emphasized the necessity for career

planning today and the likelihood that a young American woman will eventually spend twenty-five (25) or more years of her life in full-time employment. She also cited statistics showing the clustering of women into a few low paying occupations and the resultant disparity in wages earned by men and women. She then described the opportunities available to women in the field of Engineering Technology and encouraged interested females to enroll either in the regular curriculum or special project summer course at Trident Technical College.

The Project Director also visited thirteen (13) area industries, explained the project to plant managers and personnel directors, and enlisted their aid and support. While some industrial representatives had helped plan the project, others were unaware of Trident Technical College's effort and were delighted to know that it was taking place.

As publicity about the project spread, the news media featured it several times. Appendix B shows newspaper and magazine articles which appeared. In addition, the local television stations ran news features three times and one station, Channel 5, devoted its half hour program "Take Five" to the project. The project also paid for many 30 second media spots on radio and television which featured women in the film and were designed to change people's attitudes about engineering technology as a career appropriate for men only.

In summary, the public awareness campaign attempted to reach the entire community through media coverage and advertisements, and to reach select populations such as high school students, community leaders, and area employers through direct contact with the Project Director. In this way it was hoped that area women would decide to pursue a career in Engineering Technology and that these

women would receive widespread support and encouragement from those around them.

Specialized Recruiting and Testing: By February 1978, the high school visits had been completed by the Project Director and applications for the special summer program were coming in. An admissions committee made up of the Director of Admissions, an Admissions Counselor, a Student Development Counselor, the Director of Career Development, two Engineering Technology faculty members, and the Project Director was formed. Junior and Senior girls who applied for the program were required to submit the math and science courses they had taken and grades received, one teacher recommendation, parental permission to take the course, and a written statement of why they wanted to be in the program. One hundred thirty-two (132) applications were so submitted and these applicants were invited to come in for a personal interview with two members of the admissions committee. One hundred nine (109) students followed through with the interview. They received points for the various aspects of the application procedure as detailed in Appendix C. Those earning 15 or more points were automatically accepted into the program. The others were considered individually by the entire committee with a total of one hundred two (102) being accepted and seven (7) being rejected. All applicants were informed by letter of the committee's decision. Eighty-four (84) students (50 Juniors, 31 Seniors, and three graduates) ultimately began the program. The others who were accepted elected not to attend, in most cases because they were offered full-time summer jobs. A statistical breakdown of participants can be seen in Appendix D.

Although virtually all the students selected for the program had completed at least two years of algebra, it was decided to test them using the Trident Technical

College Math placement test. This test is based on the North Carolina Math Test and is ordinarly used by the College to place incoming students. Half the test covers basic arithmetic and half covers basic algebra I, with a few simple logarithm problems. The test was not used to screen applicants since the admissions committee felt strongly that highly motivated students with a weak mathematics background should not be excluded from consideration. It was anticipated that perhaps 50% of the students would test out as needing remedial algebra help. However the percentage turned out to be higher, with 58 (69%) of 84 students demonstrating this need. Based on these scores 10 students were assigned to Math 054, a basic arithmetic course, 24 were assigned to Math 090, a course somewhat similar to but more comprehensive than high school pre-algebra I, and 24 were assinged to Math 100, a course analagous to a fast paced high school algebra I. These results were discouraging since the high school records of the students had indicated a much higher level of preparedness. In one extreme case a student needing basic arithmetic had just completed a course called Algebra III/Trig at her high school. A more common occurance was for students who had completed Algebra I, Algebra II, and Geometry to be enrolled in Math 100. Based upon their high school records very few of the students should have required remedial mathematics but for the majority both their test scores and their later performance in the math classes indicated that they did in fact need the review. In general the Seniors were less well prepared than the Juniors, with only 5 of 31 Seniors not needing this help.

Summer Program: Meanwhile during the winter and spring, fifteen (15) TTC faculty and staff members were planning the special summer program. It was decided by them that since neither the Juniors nor the Seniors had any knowledge of what was involved in Engineering Technology, both groups would be

treated identically. They would be exposed to six "laboratory experiences" in the following engineering technologies:

1. Architectural Engineering Technology---------- 8 lab hours
2. Chemical Engineering Technology---------- 8 lab hours
3. Civil Engineering Technology---------- 8 lab hours
4. Electrical Engineering Technology---------- 8 lab hours
5. Electronics Engineering Technology---------- 8 lab hours
6. Mechanical Engineering Technology---------- 8 lab hours

In addition seven (7) other related topics were deemed valuable and were added:

1. Assertiveness Training---------- 8 lab hours
2. Data Gathering---------- 4 lab hours
3. Machine Tool Operation---------- 8 lab hours
4. Measurement---------- 6 lab hours
5. Physics---------- 8 lab hours
6. Problem Solving----------16 lab hours
7. Small Engine Repair---------- 8 lab hours

The course was entitled "Careers in Engineering Technology" (EGR 105), was to carry two (2) units of elective credit, and was to be graded pass/fail.

Three other activities were added to the program: industry tours, industry speakers, and career development films. Each student viewed three films on women in non-traditional careers and heard three panel presentations by area women currently working in fields of engineering or engineering technology. Each student also went on ten industry tours Lists of the films used, speakers and their companies, and industries toured appear in Appendix E.

The orignial plan called for 100 students and these students were to be divided into 10 groups of 10 students each. The groups were labeled 1A, 1B, 2A, and so on through 5B. This was done because some labs were appropriate for groups of ten students (Architectural ET, Civil ET, Electrical ET, Electronics ET, Mechanical ET, Machine Tool Operation, and Small Engine Repair), while others were appropriate for groups of twenty students (Chemical ET, Assertiveness Training, Data Gathering, Measurement, Physics, Problem Solving). Thus the A and B sections of the group were sometimes scheduled together and sometimes separately depending upon the activity involved. For films, speakers, and tours the students were in groups of ten (10) to fifty (50) students depending upon the particular tour, speaker, or film involved.

The course was scheduled to meet every Monday through Thursday from 8 AM until 12 noon for the eight weeks beginning June 19th and ending August 10th. There were two (2) 115 minute periods each day, with a 10 minute break between them. A sample schedule for one group can be seen in Appendix F.

The mathematics classes ran for eleven weeks and were handled in a traditional manner with the exceptions that only FACET students were enrolled in the sections and that when students in Math 100 had covered the syllabus material they were allowed to take the final exam. Normally at TTC Math 100 students barely have time to cover the material, but since most of the FACET students had recently taken a similar course, 80% were able to test out early. Math 054 and 090 students were, however, so far behind in their level of preparedness that they went the full eleven weeks and covered as much ground as possible on an individualized basis. Of 58 math students, only 4 failed to pass their courses. Six (6) however, withdrew before completing their math. Course descriptions for each mathematics section can be seen in Appendix G.

Throughout the summer an attempt was made to make the participants feel special and important. Tuition costs for EGR 105 and the math courses were paid for by the project. In addition, each student was issued a calculator and safety glasses for use in the labs. Those who finished the course were allowed to keep them. Levi Strauss and Company also donated a denim shoulder bag to each participant. Finally, the students were given the opportunity to buy (for $3) a T-shirt with the FACET logo on it, and most did so. All these special touches contributed to a feeling of comraderie throughout the summer.

At the end of the Careers in Engineering Technology course those Seniors (now graduates) who wanted to continue at TTC were pre-registered for the fall quarter. The Juniors (now Seniors) were advised to continue their mathematics and science studies in high school. On the final day of the class the participants were given certificates and were asked to evaluate the course (see section on evaluations). The Project Director will continue to follow the progress of the students who have returned to high school.

Faculty Orientation: The Project Director worked informally with the faculty on awareness of sex bias and sex role stereotyping throughout the year by circulating relevant articles, statistics, and case histories among them. Her office was located with the other ET Division faculty, thus facilitating this type of interaction.

During the project year three (3) consultants visited the project and worked formally with the staff to reduce sex role stereotyping and sex bias. Carol Eliason, Director of the Center for Women's Opportunities of the American

Association of Community and Junior Colleges came in July 1977, met with project staff, and was interviewed by the local news media. Norma Raffel, National President of the Women's Equity Action League (WEAL) worked with the faculty for two days in March 1978 and also was featured in media news stories. Finally in June 1978, Rose Daitsman, an engineer and Director of the Gateways to Engineering, Science, and Technology program at the University of Wisconsin advised faculty and staff on strategies to use with the summer students. Resumes of these consultants can be seen in Appendix I.

Miscellany: Throughout the project year the director made an effort to meet each female student in the ET curriculum. She organized monthly "nurture group" meetings for these students to meet staff and industry representatives, as well as each other. Topics of special interest to the women were discussed and speakers were usually provided. The Project Director served as a bridge between the students and available services such as tutoring, counseling, and financial aid. It was hoped that each woman enrolled knew that if ever the going got rough, the director was an advocate who would be of help in whatever way possible.

RESULTS AND ACCOMPLISHMENTS

The enrollment of females in engineering technology programs at TTC was affected dramatically by FACET. Appendix H shows the number of females enrolled in each ET curriculum for the past six quarters and the percentage of the total enrollment which this represents. Even before the large scale public awareness campaign began, people started to hear by word of mouth that Trident Technical College was looking for women to study engineering technology. Persons associated with the College began to give the names of friends they thought might be suitable students to the Project Director. She would contact them, and while not all ultimately enrolled, they would in turn tell their friends about it. At the same time the Admissions Counselors, newly aware of the opportunities for women in the field, began to encourage women with math ability but unsure of a major to talk with the Project Director about the program. Between the summer and fall quarters of 1977, female enrollment rose from 26 to 60 students, a change of from 6% to 9% of total enrollment. It continued to rise throughout the academic year to a high of 74 students in the spring quarter and 12% of overall enrollment. This rise was a totally unanticipated accomplishment, since it was originally planned that female enrollment would begin to rise in the fall of 1978 after a full year of project activities. Most of the women who enrolled during the year had graduated from high school between two and ten years ago, and were returning to school to pick up marketable skills.

Not only did the numbers of women enrolled change, but also the classification of these students was altered. The record system at TTC is set up so that students declare their own curriculum. A large number of students entering the College are required to enroll in developmental studies English or mathematics

courses due to deficiencies in these areas. When they enroll in these developmental courses they declare a major, and thus can be recorded as engineering technology students even though they are not taking ET courses. In the spring of 1977, only 66% of the women were actually taking courses in the Engineering Technology Curriculum. By the spring of 1978, this percentage had increased to 78% of the women enrolled. In the spring of 1977 only 7 women were eligible for graduation in 1978. By the spring of 1978 25 women were eligible for graduation in 1979. Since one of the project objectives is to graduate 35 women in 1980, FACET is well on its way to meeting this goal.

The public awareness materials produced by FACET have received widespread praise. The poster, brochure, and film all received local ADDY Awards (awards for excellence given by the Advertising Council) and the film won a first place ADDY for the entire Southeast region. The film has been put on videotape by TTC's media department and has been sent upon request to 34 institutions in 14 states. The poster and brochure have been disseminated even more widely.

The Project Director has been asked to give talks on the project at several regional and national meetings: the Council for Occupational Education regional seminar, October 1977; the Purdue Conference on Women in Engineering, December 1977; the American Association of Community and Junior Colleges national convention, April 1978; the National Council for Resource Development regional meeting, May 1978. In December 1978 she will speak at the national convention of the American Vocational Association.

The FACET recruiting strategy of setting up talks at each area high school was so successful that it has been incorporated into the College's regular recruitment plan. The admissions recruiters will, in the future, speak to high school

students about specific programs rather than about the College in general. Each high school counseling office in the area is now thoroughly familiar with FACET and the fact that Engineering Technology is a booming field for women. Secondary school personnel have been highly complimentary of the program and have actively supported it by setting up meetings between the Project Director and students.

The summer program exposed 84 females to the careers available in Engineering Technology. The plans of the 28 high school graduates who finished the summer course are summarized below:

Major in Engineering Technology at TTC----------	13
Major in Machine Tool Operation at TTC----------	1
Major in Industrial Drafting at TTC----------	1
Major in Business courses at TTC----------	3
Major in Engineering at 4-year colleges----------	7
Major in Biology at 4-year college----------	1
Enlist in Navy as a draftsman----------	1
No plans for further education----------	1
TOTAL	28

Twenty of the twenty-eight plan to study Engineering or Engineering Technology, and an additional 3 plan non-traditional careers in drafting or machining. At least two of the six graduates who did not finish the course are known to be planning careers in the field as well. Although the original goal was for 35 students to enroll from the summer program into the fall Engineering Technology curriculum, the plans of the twenty-eight (28) graduates who finished the course still are impressive. These results will be addressed more thoroughly in the next section.

In January 1978 the FACET project was cited by the American Association of Community and Junior Colleges as one of six exemplary programs of vocational outreach to women in the country. This honor was especially significant because the other five programs so designated had all been in operation for some time. The potential impact and importance of FACET was recognized immediately by the Association because the project is the first of its kind in the nation to address the scarcity of women in the engineering technologies.

EVALUATION

Objectives 1 and 2 call for at least 35 women to be graduated each year from ET programs at TTC and to be hired by local industries beginning in June of 1980. Although it is too early to evaluate these objectives, much progress has been made. It is anticipated that 25 women will graduate in the spring of 1979 and that the goal of 35 will be surpassed the following year. Detailed records will be kept by the College on the progress of these students through the program and their subsequent employment.

Objective 3 predicts that female graduates from the ET curriculum will earn starting salaries higher than females graduating from traditional programs. Assuming a relatively large number of women graduate in 1979 it should be possible at that time to begin evaluating this objective. Statistics from the annual TTC follow-up survey of graduates will be used to evaluate this objective.

Objective 4 states that the capacity of Trident Technical College to facilitate an easy transfer of females from high school to ET programs at the College will be enhanced. It is expected that each year, beginning in the fall of 1978, the percentage of high school females who enroll in ET curricula will increase. The College's reporting system will make this statistic available for the fall quarter by October 1978. However, it is already known that in the fall of 1977, thirteen (13) summer program students enrolled from high school and in the fall of 1978 at least fifteen (15) will enroll. The total number will not be known, however, until registration has actually taken place.

Also in the fall of 1978, the parents of the students in the summer program, the high school counselors who worked with the Project Director during the

year, the teachers who wrote letters of recommendation for the participants, and the employers who participated in the summer program will be asked to evaluate the project. The questionaire will deal specifically with the College's efforts to ease the transition of females from high school into a non-traditional curriculum. This survey can not be completed until the fall of 1978 because teachers and counselors will not return to their schools until then.

The students who have participated in the Careers in Engineering Technology course have already completed such a survey, the results of which are compiled in Appendix J. It shows that of 66 responses, 54 will probably study engineering or engineering technology and that 31 students plan to study at TTC. Most of the respondants (47) first heard about FACET from the Project Director when she visited their schools, rather than from media sources. All rated the program either excellent (47) or good (15). Faculty and Staff members at TTC have also completed an evulation survey, the results of which are summarized in Appendix J. The respondents were overwhelmingly favorable, with 95% feeling that the money spent on the project was worthwhile and that the project should be replicated elsewhere.

Objective 5 concerns the integration of student services and instruction at the College through collaborative planning and team teaching in the Careers in Engineering Technology course. This objective was achieved in that faculty from three (3) divisions (Arts and Sciences, Industrial Technology, and ET), staff members from the Development Office, and Student Services Staff all worked to plan, implement, and teach the Careers in Engineering Technology course. Appendix K lists all those who were involved, their specialties, and

the roles they played. The course was collaboratively planned by fourteen (14) persons and taught by twelve (12) persons. It is expected that this trend will continue with the implementation of year-round introductory courses for women interested in non-traditional careers. (See conclusions and recommendations section.)

Objective 6 mandates a permanent emphasis on non-traditional careers for females at TTC. An annual report is to be published with the numbers of females in ET programs each year. This final report constitutes the first of these, with Appendix H summarizing the figures for the past year. The annual report will also list female graduates of the ET curricula and their employers. Appendix K contains the first such list. Clearly this objective is being met since female enrollment has jumped from 6% to 13% of the total and since the number of female graduates has risen from 1 in 1977 to 7 in 1978 with the expectation of 25 in 1979.

Objective 7 addresses the need to replicate the project in at least two other two-year colleges. This objective has, in part, been achieved. While no college has yet replicated FACET in its entirety, Greenville Technical College and Tri-County Technical College both have incorporated parts of it into their overall programs. Two other South Carolina technical colleges, Florence-Darlington Tec and Piedmont Tec have expressed interest in doing so. The Project Director has made presentations during the year to the Vocational Center Directors and the Deans of Students and the Deans of Engineering Technology for the various colleges of technical education in South Carolina. She has also served as a consultant at Piedmont Tec for two days and helped its Committee on Women's Programs plan for the future. Colleges from twenty-one (21) states have requested and received information on FACET. Given the project's

immediate success in raising female enrollment, it is anticipated that more colleges will see fit to duplicate at least parts of the project.

CONCLUSIONS AND RECOMMENDATIONS

The major conclusion to be drawn from the first year of FACET is that there are a large number of females, both in high school and already graduated, who are willing and able to embark upon careers in engineering technology. while the stereotypes referred to earlier still exist, women who are aware of the economic inequities of sex role stereotyping are willing to move into areas considered non-traditional for females. Given the favorable employment situation with business and industry anxious to hire qualified women in these areas, the time is right for a program such as FACET.

As with any project which breaks new ground, some changes to the orignal plan ought to be considered. It was probably too ambitions to try to enroll 100 high school girls into a special summer program during the project's first year. It may be that when the Careers in Engineering Technology course is offered again next summer several hundred students apply because of favorable publicity generated by those who participated this year. For the first year, however, it was obvious by May that FACET faced stiff competition from summer jobs and family vacations. Most attrition occured before the summer program began, with 23 of 132 applicants never coming in for an interview and 18 of 102 accepted never showing up for the course. Of the eighty-four (84) who did start the summer program, eleven (11) dropped out. Their reasons are summarized in Appendix M.

One month before the Careers in Engineering Technology course began, when it was clear that less than 100 high school girls would enroll, an effort was made to locate older women who had graduated earlier and might be interested in the course. Most of those contacted, however, could not affort to devote sixteen (16) hours a week to a single course. Six (6) expressed interest, but

only three (3) began the class and one of these dropped out because of family responsibilities. Another missed so many sessions - also due to family problems - that while she did finish the course she could not receive credit for it.

From the jump in female enrollment in the regular curriculum it is clear that there is a great deal of interest in "older women" (aged 18 and up) in engineering technology. A program such as FACET should not exclude these women, but a time-consuming course such as Careers in Engineering Technology is not appropriate to their needs. A shorter version of the course is needed for this group and it should have both day and evening sections to accomodate working women.

In conducting a program such as FACET great care must be taken to explain the differences between engineering and engineering technology. The public has only a limited understanding of the former and almost no understanding of the latter. The Careers in Engineering Technology course provided for students to meet both engineers and engineering technicians so that they could see what was involved in each career. The fact that approximately one-third of the graduates in the summer program plan to pursue B.E. degrees shows that this distinction needs to be made clear for the young women considering a career in the broad field of engineering.

Although 71% of the students surveyed and 70% of the faculty felt that 8 weeks was an appropriate length of time for the Careers in Engineering Technology course, it is the feeling of the Project Director that a six week course would be more appropriate. Attendance began to drop in the fifth week and by the seventh week had become a major problem. Tardiness was also a big problem, with

the students appearing to carry over poor attendance habits from their high schools into the College. Pass/fail grades based largely upon class attendance did not seem to affect the problem. When the course is offered again next summer each student will sign a contract which will state clearly the requirements of attendance, promptness, and participation for a passing grade in the course. Hopefully this will alleviate, if not eliminate, the problem.

During the project year many more women inquired about engineering technology than actually enrolled. The two reasons for not enrolling that were cited most often were that:

1. Working full-time, going to school and running a household would constitute toomany responsibilities. Yet since for many women who were mothers it was necessary to work, a two-year program of full-time school was financially out of the question.
2. The rigor of the ET program, particularly all the science and mathematics required was too intimidating to even attempt.

These women were usually underemployed single parents who desperately needed training and skills. Since CETA funds are available for one year of schooling, the one year diploma programs in areas such as machine tool operation, welding, and drafting might be ideal for such women. These fields are just as sex-typed "for males only" as are the engineering technologies, but they do not require as much academic training and they offer higher salaries than most female oriented jobs. For this reason FACET will in the coming year expand to include "FACIT" - Female Access to Careers in Industrial Technology. Funding for the project continuation and expansion is being provided by an OE Career Education Grant. It will build upon the successes of the first year and hopefully will include women who were not able to be served in the past. A less time consuming

exploratory course in the engineering and industrial technologies will be offered with both day and evening sections. A full-time counselor will also work with the women in an effort to help them decide for themselves what direction to take.

For any college planning to incorporate portions of FACET into its program, several recommendations can be made:

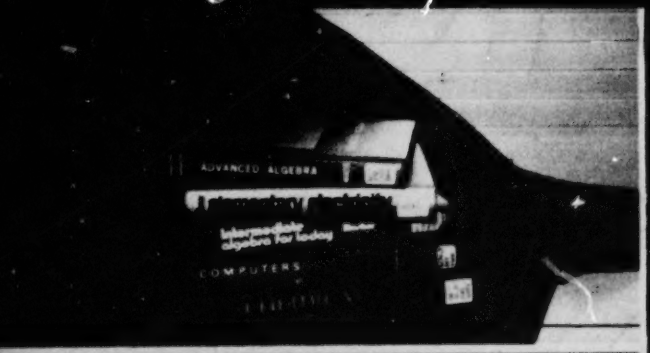
1. A full-time person responsible only for the program is essential. This person should be physically located with the faculty who teach male-oriented programs.
2. Start small and build on early successes. Always try to incorporate project activities into the existing institutional structure.
3. Two groups should be targeted for exposure to non-traditional careers: girls still in grades 1 through 12 and women who have been out of school for one or more years.
4. An audio-visual presentation such as a film or slide tape presentation which features actual "non-traditional women" as role models is a real plus when making community presentations.
5. Personal contact with the community through schools and area groups is an excellent way to reach people.
6. Local industries have good resources which they are anxious to use to help in affirmative action efforts. They should be utilized to a maximum extent.
7. In exploratory courses hands-on laboratory experiences should be emphasized and lectures should be avoided. Participants should meet women role models and visit industrial sites.

8. Once female students are enrolled many may need reassurance and guidance. This service should be readily available.

Copies of this report will be made available to all persons who have made inquires about FACET during the project year. Others may receive a copy by requesting one from the Project Director. Copies of the film "Make Something Happen" are also available on 3/4 inch videotape cassettes. Requests for information or materials should be directed to:

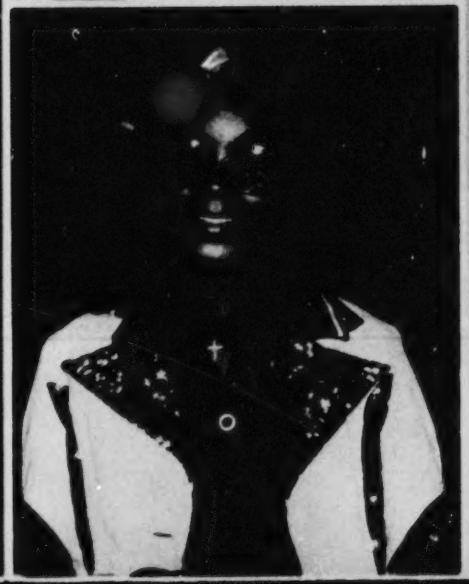
Ms. Alison Caughman
Trident Technical College
Post Office Box 10367
Charleston, South Carolina 29411

APPENDIX A



Seven Beautiful Careers

Engineering Technology



The seven types of Engineering Technology offered at Trident Technical College:

How do I get into the program?

If you are still in high school, you should be preparing yourself by taking certain courses. One year of algebra is essential, but two years of algebra and one year of geometry are recommended. The more math you take the better prepared you will be, so take trigonometry and calculus too, if you can.

Although not required for admission, chemistry and physics are recommended as preparation for engineering technology. If you are a junior, you should apply to TTC for entry into FACET's summer preparatory program. If you are a senior, you should apply for entry into FACET's summer pre-engineering program. For information on how to apply, call Alison Caughman at 553-2375.

If you are out of high school, you have two options. Some adults have a math and science background sufficient to enter the regular engineering technology curriculum. They are admitted directly into the ET courses. Many, however, spend one or more quarters taking basic math and science courses which prepare them for the program. The admissions counselors at Trident Tec can help you decide which is the best course of action for you. Call the admissions office at 553-2375 for further information.

Trident Technical College
P.O. Box 10367
Charleston, S. C. 29411
553-2375

FACET

Female Access to Careers in Engineering Technology

Why FACET? (and what is FACET anyway?)

FACET stands for Female Access to Careers in Engineering Technology. Why "female access"? Statistics show that only 1% of students earning the Associate Degree in Engineering Technology are female. Most girls never even consider entering the field because it has a "for men only" reputation.

But today, women are needed as engineering technicians and they are actively being recruited by companies in the Charleston area. Graduates of TTC's Engineering Technology (ET) curriculum generally are able to choose from several job offers at salary levels much higher than graduates of most other two-year programs.

FACET will provide special summer course-work for girls and women interested in the curriculum. Fifty girls who have completed their junior year of high school will enroll in a preparatory summer program designed to show them the career opportunities available in the field of engineering technology and to teach them basic technical skills used throughout the curriculum. Fifty girls and women who have graduated from high school will enroll in a summer pre-engineering program designed to upgrade their math, science and problem-solving skills. Tuition and fees for both courses will be paid for by the project.

What happens after I'm accepted as a FACET student?

If you are a junior, you will enroll in the summer preparatory program. After it is completed, you will return to your high school for your senior year. If you are a senior, you will enroll in the summer pre-engineering program after graduation. After it is completed, you may apply for admission to TTC as an engineering technology student. Although it is hoped that all FACET students will choose to continue in the regular ET program, you will be under no obligation to do so.

If you do choose to continue, you will be a member of a very special group. The college sponsors a "Nurture Group" for female ET students which meets monthly with interested women on the faculty and in industry. This group provides friendship, encouragement and practical support to its members. As an ET student, you will be eligible for tutoring in mathematics or English and you will find the ET faculty most willing to give you extra help when you need it. Finally, TTC counselors are always available to serve you. You will find that Trident Tec, which is fully accredited by the Southern Association of Colleges and Schools, is a caring institution ready to help you prepare yourself for a challenging future.

What is the Associate Degree in Engineering Technology?

The two-year ET program at Trident Technical College prepares students to apply engineering knowledge and skills to scientific theory as qualified engineering technicians. Teamwork is essential in this exciting field as the technician helps to translate theories and ideas into the reality of today's technological achievements. The miracle products of our modern society which have made possible space travel, instant photography and computation with pocket calculators would never have been possible without the dedicated efforts of engineers and engineering technicians. By enrolling in TTC's engineering technology curriculum and earning the associate degree, you can prepare yourself for a challenging and rewarding career.

FACET

Female Access
to Careers in
Engineering Technology

Trident Technical College
P.O. Box 10367
Charleston, S. C. 29411

Trident Technical College does not discriminate on the basis of race, sex, religion or national origin.

Seven Beautiful Careers in Engineering Technology

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Seven Beautiful Careers in Engineering Technol

For further information, contact Trident Technical College, Alison Caughman, 55

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Civil Engineering Technology

Chemical Engineering Technology

Mechanical Engineering Technology

Architectural Engineering Technology

Electronics Engineering Technology

Electrical Engineering Technology

Seven
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ent Technical College, Alison Caughman, 553-2375, ext. 266

4567

Architectural Engineering Technology

Electronics Engineering Technology

Electrical Engineering Technology

General Engineering Technology

APPENDIX B

Women In Dark On Careers

By BOBBIN HUFF
Trends Assistant Editor

Nancy Carol Eliason of Alexandria, Va., refers to herself as a corporate gypsy.

She recently traveled 24,000 miles to visit 10 two-year colleges. As director of the Center for Women's Opportunities, American Assn. of Community and Junior Colleges, she has been awarded a Carnegie grant to assess the status of women in two-year colleges.

Ms. Eliason is in Charleston to consult officials at Trident Technical College (TTC) concerning their Female Access to Careers in Engineering Technology (FACET) program.

In a survey of 900 community colleges, she found there has been a sharp rise in enrollment of women. Of these, the largest increase has been in adult women returning to school part time. Of females attending full time, 46 per cent were enrolled to gain skills and credentials to enter the work force immediately.

"The tragedy is less than 10 per cent of the women had ever had vocational tests. They were making their career choices on fantasies rather than reality."

A large percentage of these women had been steered toward traditional women's occupations, such as secretarial work, teaching, communications or human relations.

She calls this a "heinous crime" because it doesn't take into account where most of the jobs are. "The labor market is getting more and more specialized. The biggest opportunities now are positions in industrial technology; the environmental field — waste water treatment or recycling for example; service fields, such as hotel or motel management; businesses dealing with leisure activities; accounting; and marketing."

In addition to being more numerous, these jobs pay higher, she points out. "We need to give girls awareness of income potential. In the South, more females are completing high school than ever before. And 40 per cent will need to be in the labor force. Are we going to commit the crime of putting these women in poor paying and dead-end jobs?"

Ms. Eliason charges there's still a tendency for parents to look at their daughters, not in terms of how much money they'll make, but of whether they'll be able to catch a man. Taking into account our high divorce rate and the possibility of a breadwinner's death, she points out, these women are more than likely going to need skills they can build on.

The consultant's goal is to help two-year colleges establish awareness on campus and in the community of all the career options available to women. She also wants to ease the way for women who choose to enter nontraditional careers.

(Staff Photo by Bobbin Huff)

Nancy Carol Eliason

One of the most successful methods involves using women graduates of nontraditional programs, or women working in those fields, as role models.

Several of her ideas have already been implemented in the FACET program at TTC. After radio spots and a newspaper article were done on a female civil engineering technology graduate, the school received 36 inquiries from women about the program.

Also, students, graduates and faculty specializing in nontraditional subjects have formed a voluntary support group to counsel prospective students and provide moral support to young women in the programs.

In some schools, notes Ms. Eliason, women in unusual fields are paired with other females in a buddy system. "This makes them less susceptible to male hassles and more likely to stick with their studies."

Sex Bias Detectable, Says Woman

By MARGARET LOCKLAIR

Wives and daughters. Are men at a crossroads in between?

Snow-haired Norma Raffel says so. "What I'm seeing in general is that fathers are much likelier to want equal opportunities for their daughters than for their wives."

The national president of the Women's Equity Action League, says that fathers see themselves and their wives as part of an older generation whose life patterns are already set.

But they see their daughters growing up in a different world. And they want them to have their fair slice of it.

"In our area (central Pennsylvania), it was the fathers who went down and complained that their daughters couldn't play Little League baseball," Dr. Raffel said. "Where they've been most helpful is in sports. But they're also encouraging their daughters to go into new fields. Engineering, for example, since we're talking about it here today."

Dr. Raffel was in Charleston Friday as a consultant on equal opportunity at the request of Trident Technical College, conducting a workshop for instructors who will soon be teaching young women in an area that has traditionally attracted only men — engineering technology.

The purpose of the workshop was to help the group of mostly-male instructors identify sex bias and stereotyping in their classroom programs.

One worksheet that she distributed was headed: "Recognizing Sexist and Non-sexist Behaviors," and was designed for vocational education instructors. A sample situation, revised for engineering technology follows:

• "As a teacher, you believe it's important for you to support students in their academic achievement, career aspirations and social behavior. You make the following comments to students:

• "You finally got your hair cut, Melissa. You certainly look more attractive." "Greg, you did a really great job putting in the 220 wiring! You'll be ready for an apprenticeship soon." (This is a classic example of "sex-biased behavior" in the classroom. Dr. Raffel says — praising male students on their course accomplishments, and praising female students for looking attractive or for being neat and cooperative.)

• "Kathy and Louis, both of you did an excellent job on drawing these floor plans. That's relly good work." (This is an example of "sex-fair behavior," Dr. Raffel says, or treating both sexes in equal or similar ways.)

• "Marguerite, I noticed yesterday tht you're handling the transit much more confidently now than you were two weeks ago. You may end up being the best surveying student we've got around here.!" (This shows "sex-affirmative behavior." or an attempt to compensate for the effects of past discrimination.)

• Had the instructor said, "Girls, stand out of the way while the boys learn how to operate this chemical reactor," it would have been labeled "discriminatory behavior," or a violation of Title IX, which prohibits discrimination on the basis of sex in educational programs.

Trident Tec is conducting a special state- and federally-funded project designed to attract women into engineering technology and its well-paying job opportunities beyond college. The need for the project, called FACET, or Female Access to Careers in Engineering Technology, is pointed up by the fact that in 1978 there was only one woman in the 132-member engineering technology graduating class. Sixty women are enrolled in the curriculum now, and more are expected this fall, because of recruitment efforts in the tri-county's high schools.

Engineering technology is definitely a non-traditional choice for women, Dr. Raffel says. She knows about such choices, first-hand.

"My aspirations were very traditional in high school," she said. "I wanted to be a medical technician — that's a women's field." She did it. But she wanted to learn more, and went on to earn her bachelor's, master's and finally her doctorate degree in microbiology.

But later, when she and her husband, who also has his doctorate, went to Pennsylvania State University, her job turned out to be far less than what was promised her. "They really wanted my husband at this institution ... But it was there that I became aware of blatant discrimination against women. They had a quota system on the admission of women — in the United States of America! I couldn't believe it! Many of the younger men there — the division chairmen - said, 'I wouldn't hire a woman'."

In 1972, she left the academic world and has since served as a consultant for a number of colleges, universities and educational organizations. In 1977, she traveled to China as part of a delegation studying the status of women, and has acted as a visiting lecturer in India and Nepal. Later this year, she leaves for Egypt, Saudi Arabia and Iran to study the status of women there.

Something Beautiful is happening in Engineering Technology

"Make Something Happen," the movie soundtrack urges its female high school audience. Scenes of young, successful women—efficient in their jobs as engineering technicians—move across the screen. Music and voices rise to deliver a final pitch: "Make something happen in your life."

What's happening at Trident Technical College in Charleston is a sudden leap in female enrollment in the seven engineering technologies. Seventy women now constitute 12 percent of the total enrollment in the fields of architectural, chemical, civil, electrical, electronic, general and mechanical engineering technology.

Primarily responsible is a project called FACET, or Female Access to Careers in Engineering Technology. Funded by the State Department of Vocational Education, FACET grew out of several distinct needs of the college, industry and the local community:

- enrollment in the engineering technology programs at TTC was dropping, causing unwanted program cutbacks.
- the lowered enrollment decreased the number of engineering technicians available to local industries.

- affirmative action plans were placing pressure on industries to hire women as engineering technicians but there were few qualified women to be found.

- female unemployment in the Charleston area was greater than that of men. Underemployment was also a problem.

FACET is designed to address all these needs.

Its aim is to awaken the public to the fact that an associate degree in engineering technology offers a woman the opportunity for a challenging job in which she can use her intelligence, earn promotions, and be well paid for the work.

How is the message being driven home; The major thrust is being concentrated in the high-schools of the tri-county area.

Alison Caughman, FACET director, makes an appearance at each school armed with a factual speech on the importance of career planning, the 12 minute film, and packets of brochures and posters designed around the theme, "Seven Beautiful Careers in Engineering Technology."

From these contacts, 100 young women are being selected to participate in an eight-week summer course designed to expose them to what engineers and technicians do. The goal is for at least 70 percent of the course participants to enroll in the various engineering technology programs at TTC after they graduate from high school.

The original plan calls for FACET to enroll students who have completed the summer course in the fall of 1978. But the current dramatic increase in female enrollment has resulted from word-of-mouth advertising about the project among women who had already graduated from high school.

The college sponsors a "nurture group" made up of these enrolled students as well as interested women from the faculty and industry. The group meets monthly to discuss topics of interest. Tutoring in mathematics is available to all students but a special effort is made to see that the women get this help if they need it. The ultimate goal of the project is to graduate at least 35 qualified female engineering technicians each year, beginning with the class of 1980.

FACET has a full-time director, but a critical factor in its success is the fact that all project activities are conducted within the existing college structure. For example, the public information office produced the film, brochure, poster, and radio, television and newspaper recruiting campaigns. The recruitment counselors encourage all mathematically talented female applicants to consider majoring in engineering technology.

Kathy Newman, one of the student counselors, serves as co-leader of the nurture group. Faculty members keep the project director informed about the progress of the female student, and the engineering technology instructors are planning hands-on laboratory activities to be included in the special summer course.

Cooperation with industry has also been important. The summer course participants will tour local industries and personnel officers will be invited to a spring nurture group meeting to talk to the students about the current job market.

FACET is still in the beginning phases, but the mood at Trident is one of optimism. For more information about the program, write:

Ms. Alison Caughman
FACET Director
Trident Technical College
P. O. Box 10367
Charleston, South Carolina 29411

Created Equal

designed to promote equality of the sexes in public schools

a publication of the Southeastern Public Education Program — Volume One, No. 3 — March, 1978

FACET: An Exciting New Way to Get Ahead

SUCCESSFUL PROGRAM IN SOUTH CAROLINA

FACT: Only one percent of all engineers are female.

FACT: Statistics show that women will work a minimum of 25 years in full time jobs.

FACT: Female graduates of an engineering technology program can make starting salaries of $10,500 only two years out of high school.

These are some of the challenging statistics used by Alison Caughman in her effort to recruit high school women into a program called FACET, for Female Access to Careers in Engineering Technology.

Caughman directs the intensive recruiting project for Trident Technical College in Charleston, S.C. When students hear that they may look forward to working at least 25 years, they know what Caughman means when she advises them to "pick something you like. That's a long time to be doing something you don't like."

Engineering has always been considered a male-dominated field, but industry is actually demanding females in engineering technology. One reason for this demand is the pressure put on large companies by the federal guidelines calling for affirmative action programs. The easiest and fastest way for industry to prove they have not discriminated is to show the numbers of females and minority employees they have working.

"Pick something you like. 25 years is a long time to be doing something you don't like,"

That's how FACET came about, according to Caughman. "There was a declining enrollment in engineering, but an actual demand by community employers for females. That's something we're quite proud of . . . the fact that this project grew out of the needs of the people of South Carolina, not from a federally-funded program."

"We found there were many women in secretarial science in vocational schools and technical colleges. Our placement person found that after graduating from a two year program at best these women would be making about $6,500. We had companies right here who were willing to pay as much as $13,000 for engineering technicians, and they were asking for females first."

When there were no female engineering graduates to fill that need and the job market projection

Continued on page 2

Machine Shop Students in South Carolina.

Alison Caughman, director of FACET

showed that there would be an even greater demand as the area rapidly expanded, FACET was born.

"We work very closely with the Office of Public Information here at Trident Tech to create a community awareness. Posters, TV spots and a film we produced are all part of the effort to show women the positive aspects of engineering."

One of these more positive aspects is money.

"Think of all the jobs you can that are almost always filled by women,"

A groundbreaking project, FACET is the first and only program designed to bring women into engineering technology. It has been cited by the American Association of Community and Junior Colleges as one of six exemplary projects for vocational outreach in the country.

Alison Caughman's formula for the success of FACET is to hit every school in the three-county area around Charleston, and to present the wide range of possibilities in engineering to junior

someone like Alison Caughman to provide some free counseling to their students.

After getting the attention of the students with some facts and figures, Caughman shows the film, "Make Something Happen." Highlighted in the film are strong role models in engineering and engineering technology, females who have actually graduated from Trident Tech or are working in the Charleston area.

"If it's money you're interested in, go into nontraditional fields."

"Before, I was one minute away from welfare. Now, I have control of my own life."

Alison Caughman challenges the students who listen to her presentation.

"Nurses, waitresses, secretaries, teachers," the students volunteer.

"Now think of all the jobs that are almost always filled by men."

"School principals, doctors, lawyers, construction workers."

"Which ones get paid more?" Caughman asks. "If it's money you're interested in, go into nontraditional fields."

and senior high school students. Some males are interested enough to join the groups, and Caughman doesn't object. She wants all of the students to be aware of and thinking about career possibilities . . . and the possibilities for advancement. The male students are as stunned by the facts as the females.

Most schools are under pressure now to offer career education and career development programs, so they welcome the opportunity for

We are shown one woman who tells, "When I was in high school, no one told me I would ever have to work. They all said for me not to worry, that I would get married. But no one told me that I would get unmarried. Before, I was one minute away from welfare. Now, I have control of my own life."

Other encouragement for females comes across on film.

— "The ten year job forecast shows

Continued on page 3

Created Equal

is published bimonthly by the Southeastern Public Education Program, a southern based national program of the Community Relations Division of the American Friends Service Committee. The goal of the program is the creation of public schools which are free of discrimination and prejudgment of a student's ability based on sex, or racial, cultural or class origins, and which respect the identity and potential of every student.

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If you receive more than one copy of Created Equal, please let us know.

Send all material and requests to:
Southeastern Public Education Program
Box 22652
Jackson, Mississippi 39205

editor: Muffin Chiz

engineering technology as number one on the most wanted list."

— "A two year graduate of a program in engineering technology starts out making as much money as a secretary will ever make."

— "Don't worry if you think you need some help in math or science. We'll help you if you are unsure of the skills you need for the curriculum."

The film also previews the FACET summer preparatory program at Trident Tech, designed to show women the career opportunities available in the field of engineering technology and to teach them the basic technical skills used throughout the curriculum. Fifty juniors and fifty seniors will participate in the summer program, with fees and tuition paid for by the project.

In addition to upgrading their math, science and problem-solving skills, FACET students tour local industries, hear speakers from those industries, are introducted to actual machine shops and laboratories, and go through an assertiveness training class.

The summer program lasts eight weeks, four days a week, four hours per day. It is both fun and free.

After showing the film to the groups of students, Alison Caughman repeats her four points for choosing a career:

1. pick something you like
2. pick something with opportunities for promotion - too many are dead-end
3. choose something challenging to you
4. choose something that pays you well for what you do

"Remember . . . if you're going to be doing something for 25 years, be doing something you like."

Information on the FACET program and Trident Technical College can be obtained by writing to:
Alison Caughman
FACET
Trident Technical College
Box 10367
Charleston, SC 29411

Responsibilities Of Voc-Ed Sex Equity Coordinators

Under the Vocational Act (Title II) of the Education Amendments of 1976, each state is mandated to hire "full-time personnel to assist in reducing sex discrimination and sex stereotyping in vocational education programs and activities throughout the state."

The federal allotment for reducing sex discrimination is $50,000 per state. That covers the salary of the 'full-time personnel' and all of the programs she will operate in her duties as Sex Equity Coordinator, as these employees are to be known. The money comes from each state's general grant for vocational education which is funded through the U.S. Office of Education/HEW.

Ten functions of the Sex Equity Coordinators are specified in the new legislation. They are:

1. taking such action as may be necessary to create awareness of programs and activities in vocational education that are designed to reduce sex stereotyping in all voc-ed programs
2. gathering, analyzing and disseminating data on the status of women and men students and employees in the voc-ed programs in the state
3. developing and giving support to actions to correct problems related to (2), including creating awareness of Title IX complaint process
4. reviewing all grants distributed by the state voc-ed advisory board, to assure that the needs and interests of women are addressed in all state-assisted projects
5. reviewing all vocational education programs in the state for sex bias
6. monitoring the implementation of laws prohibiting sex discrimination in all hiring, firing and promotion practices pertaining to vocational education
7. assisting local education agencies and other interested parties in the state in improving vocational opportunities for women
8. making information readily available to the State Board of Vocational Education, State Commission on the Status of Women, the Commissioner of Education, and the general public
9. reviewing and submitting recommendations regarding overcoming sex bias and sex stereotyping in vocational education, for the state annual plan and report
10. reviewing the self-evaluations required by Title IX

Names and addresses of Sex Equity Coordinators for Vocational Education in the program area of the Southeastern Public Education Program follow:

ALABAMA
Ann Turnham
State Office Bldg./Room 802
Montgomery, AL 36130

GEORGIA
Loydia Webber
231 State Office Bldg.
Atlanta, GA 30334

LOUISIANA
Joy Joseph
Box 44064
Baton Rouge, LA 70804

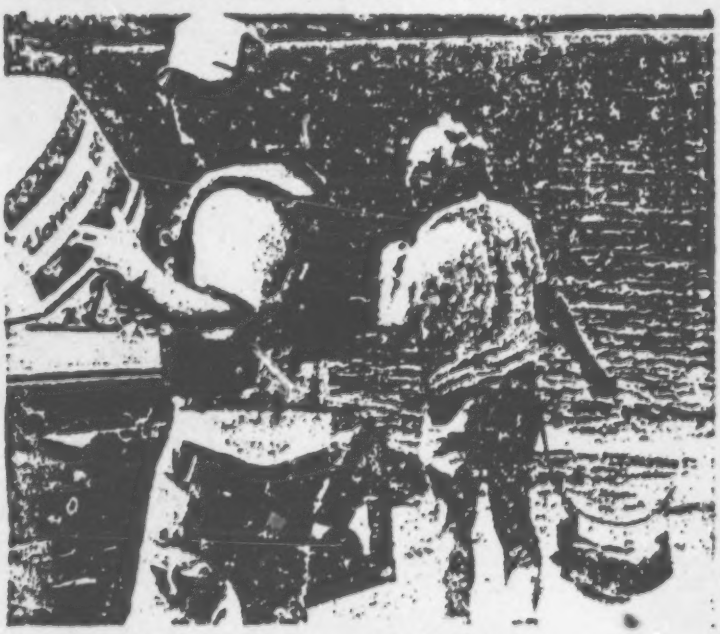
MISSISSIPPI
Judy McClarty
Box 771
Jackson, MS 39205

ARKANSAS
Peggy Patrick
State Education Bldg./VTAE
Little Rock, ARK 72201

SOUTH CAROLINA
Annie Winstead
State Dept. of Education
Columbia, S.C. 29201

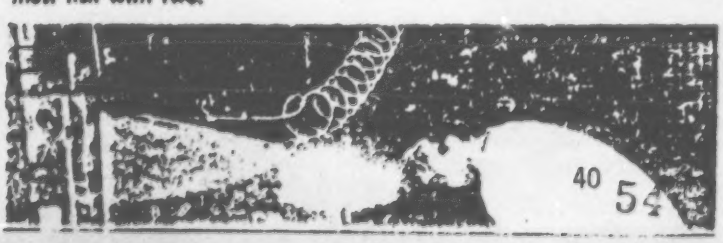
Why not a woman?

Alison Caughman, left, of Trident Technical College in Charleston urged Piedmont TEC's women students to plan their future carefully if they are interested in job security and supporting a family. Speaking to nearly 100 students at a program entitled "Why Not a Woman," Ms. Caughman suggested that those who had not made a definite career choice consider enrolling in a non-traditional education program. Her visit to the Greenwood campus was sponsored by TEC's Women's Recruiting Committee which is headed by Marilyn Parrott, right.



Bass tournament winners

James Moore of Construction Management, this year's winner of the Biggest Award ($15 and a trophy) relaxes while John Still of Textile Management carries the ten fish he caught to win the Most Fish Award (a trophy) for the second straight year. James' big, beautiful bass weighed 5¾ pounds while John's catch totalled 13¾ pounds. Steve Davis of Piedmont TEC's Accounting Department earned the second place trophy for most fish with two.



★ Scholarships

(Continued from page 1)

certificates for this honor to Myrna Arnold, Cynthia R. Ashley, Vanessa K. Elliot, Clara Fisher, Alicia Herrin, William Pruitt, and Malinda H. Wightman, all of Greenwood. Also, Horace Brownlee Jr., James Hawthorne and D'Jaris Gray of Abbeville; Arthur Dodson, Donalds; Yvonne Cunningham and Miranda McCall of Laurens; Jerlyn Herring, McCormick; Glenda D. Strnage, Clinton, and Darlene Tutton of Ware Shoals.

Dodge also presented student activities awards to the following students for their service to the college as Student Government Association senators: Anita G. Arnold, Randolph J. Floyd, Cheryl A. Hansen, James B. Herlong, Autumn G. Hill, Linda K. Klotz, Ronnie J. Odom, Calvin D. Simpkins, Jacquelyn J. Starks, Dean A. Wicker, Sammie Wideman, and Malinda Wightman, all of Greenwood. Also, Thomas Balchin and James D. Ray of Ninety Six; Robert E. Bass, Nancy W. Carter, Ronnie Gregory, Glenda Strange, Clinton; Margaret J. Berry and Robert M. Booth of Saluda; Kevin E. Bolter, Gray Court; Horace Brownlee, Jr., and Lucy B. Frinks of Abbeville; Betty Butler, Chappells; Carrie A. Kennedy, Newberry; Miranda A. McCall, Wayne A. Smith and David L. Terrell of Laurens; Jimmie Motes, Cross Hill; Paul A. Brown, Edwin F. Roach and Darlene R. Tutton of Ware Shoals; and Fred G. Russell and Scott Winn of Donalds.

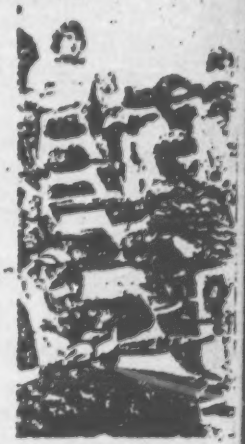
Executive committee members in the S.G.A.'s day division receiving special awards were Amelia Horne, president, Calhoun Falls; Susan Scurry, secretary-treasurer, Saluda; and Linda Thomas, vice president, Ninety Six. Evening Division executive committee members recognized were Cynthia Ashley, president, Greenwood; Michelle Morgan, secretary-treasurer, Greenwood; and Jimmie Lee, vice president, Edgefield.

The editor and staff of the student newspaper, *The Profile*, were also recognized. Receiving awards were Malinda H. Wightman of Greenwood, editor, and staff members Tweety Bratcher, Ware Shoals; Susan Scurry, Saluda, Edwin Ball, Laurens; David Ray, Ninety Six; Luther H. Rouse and Kathi D. Walter, both of Greenwood.

Seven students were recognized as scholarship recipients. Sherry L. Tucker and Deborah K. Miller, both Green-

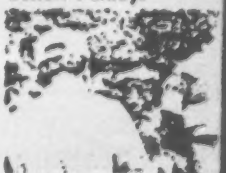
from Saluda; Denise A
a Medical Assistant stu
Greenwood; and J. Da
Radiologic Technolog
from Ninety Six. M
presentation was Mrs
Wehmann, chairman o
iliary's scholarship co

Leonard Park, presi
Greenwood chapter of
national Manageme
presented a scholarshi
annually by the organ
this year's recipien
Hansen, a Business
tration student ma
Fashion Merchandi
Hansen is a Greenwoo
and is the current



Tom Holcombe of
visits to the campus thi
dents from Industrial
have either visited the
this spring in search o

Medical Assista
women's tug-of-war
them on. Left to right
Senon Ashley.



Seven Local Women Attend TTC Summer Courses

Trident Technical College has announced the acceptance of seven Summerville high school students to its FACET summer program. Participating students include Lori D. Hall, Christina Hollings, Susan Howe, Dorothy A. Howell, Stephanie Keasey, Holly Socha, and Lisa M. Stevens.

FACET, which stands for Female Access to careers in Engineering Technology, is a program designed to train qualified females for careers in Engineering Technology.

FACET provides training in seven different areas, including civil, chemical, mechanical, electronic, architectural, electrical and general engineering technology.

The eight week summer course will emphaszie exposure to the working world of the engineering technician. It is anticipated that at least 70 per cent of the course participants will ultimately enroll in the various engineering technology programs at TTC. Students will also participate in laboratory activities and will tour local industries.

FACET is the first program of its type to be sponsored by a two year college. Its ultimate goal is to graduate at least 35 qualified female engineering technicians each year, beginning with the class of 1980.

The summer course is available to junior and senior women. Graduating seniors enrolled in the program may apply to admission to TTC as engineering students beginning this fall. Juniors will return to high school following completion of the summer course.

FACET director Alison Caughman is "optimistic about the success of the summer program. "We're looking forward to a very exciting, challenging summer for the participants," she says. For more information about FACET, write Ms. Caughman at Trident Technical College, P. O. Box 10367, Charleston, South Carolina 29411, or telephone 553-2375, Ext. 266.

the Journal
The 'People Paper' Serving James Island, Johns Island and Folly Beach.
16 . May 17, 1978 Charleston, SC 29412

Students Attend FACET

Trident Technical College has announced the acceptance of ten West Ashley area high school students to it FACET summer program.

Participating students include Charlotte G. Tucker, Tina L. Watts and Susan M. Braddock from Fort Johnson High School, Krashenda D. Backman, Jan H. Elliott, Madeline Grimes and Karen Menendez from James Island High School, Kathy A. Heinsohn and Sharon N. Kozuchi from Middleton High School, and Sandra L. Mappus from St. Andrews High School.

FACET, which stands for Female Access to Careers in Engineering Technology, is a program designed to train qualified females for careers in Engineering Technology.

The eight week summer course will emphasize exposure to the working world of the engineering technician. It is anticipated that at least 70 per cent of the course participants will ultimately enroll in the various engineering technology programs at TTC. Students will also participate in laboratory activities and will tour local industries.

FACET is the first program of its type to be sponsored by a two year college. Its ultimate goal is to graduate at least 35 qualified female engineering technicians each year, beginning with the class of 1980.

Trident Tech Accepts 32 To FACET

Trident Technical College has announced the acceptance of 32 North Charleston area high school students to its FACET summer program.

Participating students include Bernette E. Chandler, Fredalyn M. Frasier, Terrie E. Keener and Wanda R. Moses from Bonds-Wilson High School; Leslie T. Brown, Debra A. Burell and Randzella U. Thomas from Chicora High School; Helisa R. Belton, Lisa A. Bishop, Lou Ann Fultz, Karen L. Leighton, Arlene Martin and Margaret E. McVay from Garrett High School.

Also, Susan G. Barrow, Hattie M. Baylock, Angela M. Caymol, Delsey S. Cooper, Donna M. Harring, Marie B. Linton, Eve[illegible]C. Marshall; Leslie M. [illegible], Denise O'Shea and [illegible]L. Swing from Goose Creek High School; Amanda K. Coffey, Karen R. Hall, Joy McCraw, Kathy A. Milligan, Debi Russell and Donna Strobel from Hanahan High School; Jacqueline S. Anderson, Jo Lyn Brewer and Rainnie D. Calhoun from Stall High School.

FACET, which stands for Female Access to Careers in Engineering Technology, is a program designed to train qualified females for careers in Engineering Technology.

FACET provides training in seven different areas, including civil, chemical, mechanical, electronic, architectural, electrical and general engineering technology.

The eight-week summer course will emphasize exposure to the working world of the engineering technician. It is anticipated that at least 70 per cent of the course participants will ultimately enroll in the various engineering technology programs at TTC. Students will also participate in laboratory activities and will tour local industries.

FACET is the first program of its type to be sponsored by a two-year college. Its ultimate goal is to graduate at least 35 qualified female engineering technicians each year, beginning with the class of 1980.

The summer course is available to junior and senior women. Graduating seniors enrolled in the program may apply for admission to TTC as engineering students beginning this fall. Juniors will return to high school following completion of the summer course.

FACET director Allison Caughman is optimistic about the success of the summer program. "We're looking forward to a very exciting, challenging summer for the participants," she says. For more information about FACET, write Ms. Caughman at Trident Technical College, P.O. Box 10367, Charleston, South Carolina 29411.

THE CHRONICLE-South Carolina's Fastest Growing Weekly

May 20, 1978

FACET Summer Program At TEC Includes Area Students

Trident Technical College has announced the acceptance of forty area high school students to its FACET summer program. Participating students include Alethia Robinson from Berkeley High School, Cheryl Y. Stroble from Bishop England High School, Bernette E. Chandler, Fredalyn M. Frasier and Wanda R. Moses from Bonds-Wilson High School, Karen L. Bennett, Melissa H. Brown, Marlene P. Dilligard, Annette R. Joseph, Cynthia D. Lawrence, Gwendolyn D. McNeill, Suzette L. Mitchell, Sandra M. Nelson, Geormine D. Stanyard, Helen Wilson, Jacquetta L. Youngblood and Marvetta R. Youngblood from C.A. Brown High School, Leslie T. Brown and Randzella U. Thomas from Chicora High School, Patricia Bennett from Cross High School, Annarine Pugh from Harleyville-Ridgeville High School, Helisa R. Belton and Arlene Martin from Garrett High school, Hattie M. Baylock from Goose Creek High School, Adrianne C. McKenzie, Beatrice Washington and Naoni Washington from the High School of Charleston, Krashenda D. Backman and Madeline Grimes from James Island High School, Sharon E. Hawkins from Macedonia High School, Jacqueline S. Anderson from Stall High School, Barbara L. Boone, Ernestine Gourdine, Shirley Mae Middleton and Sharon Steward from St. Stephen High School and Christina Hollings from Summerville High School.

FACET, which stands for Female Access to Careers in Engineering Technology, is a program designed to train qualified females for careers in Engineering Technology.

FACET provides training in seven different areas, including civil, chemical, mechanical, electronic, architectural, electrical and general engineering technology.

The eight week summer course will emphasize exposure to the working world of the engineering technician. It is anticipated that at least 70 per cent of the course participants will ultimately enroll in the various engineering technology programs at TTC. Students will also participate in laboratory activities and will tour local industries.

FACET director Alison Caughman is optimistic about the success of the summer program. 'We're looking forward to a very exciting, challenging summer for the participants," she says. For more information about FACET, write Ms. Caughman at Trident Technical College, P.O. Box 10367, Charleston, S.C. 29411, or telephone 553-2375, Ext. 266.

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Fay C. Douty Accepted For Tech FACET Program

MT. PLEASANT—Trident Technical College has announced the acceptance of Fay C. Douty from Wando High School to its FACET summer program.

FACET, which stands for Femal Access to Careers in Engineering Technology, is a program designed to train qualified females for careers in Engineering Technology.

FACET provides training in seven different areas, including civil, chemical, mechanical, electronic, architectural, electrical and general engineering technology.

The eight week summer course will emphasize exposure to the working world of the engineering technician. It is anticipated that at least 70 per cent of the course participants will ultimately enroll in the various engineering technology programs at TTC. Students will also participate in laboratory activities and will tour local industries.

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The summer course is available to junior and senior women. Graduating seniors enrolled in the program may apply for admission to TTC as engineering students beginning this fall. Juniors will return to high school following completion of the summer course.

FACET director Alison Caughman is optimistic about the success of the summer program. "We're looking forward to a very exciting, challenging summer for the participants," she says. For more information about FACET, write Ms. Caughman at Trident Technical College, P.O. Box 10367, Charleston, South Carolina 29411.

THE EAST COOPER PILOT, Thursday, May 25, 1978

APPENDIX C

PROCEDURE FOR THE SELECTION

OF FACET STUDENTS

1978

The selection procedure for each class (eleventh and twelfth graders) will be identical, but the two classes will be handled separately so that there will be 50 Juniors and 50 Seniors enrolled. A point system using five (5) criteria will be utilized: 1) math/science courses completed, 2) math/science grades, 3) teacher recommendation, 4) written statement of purpose, and 5) personal interview.

Math/Science Courses: A maximum of 4 points can be earned. Students who have passed 5 or more math or science courses will earn 4 points. Those having passed 4 such courses will earn 3 points. Those with 3 courses will earn 2 points, those with 2 courses will earn 1 point, and those with less than 2 courses will earn no points.

Math/Science Grades: A maximum of 4 points can be earned. Grades will carry the following point values: A - 4, B - 3, C - 2, D - 1, F - 0. The student's grade point average for her math/science courses will be computed and rounded to the nearest whole number which will represent the number of points earned in this category.

Teacher Recommendation: A maximum of 4 points can be earned. Each applicant will be required to submit a written recommendation from one high school teacher. In this recommendation the teacher will be requested to rate the student as excellent (4 points), good (3 points), or average (2 points). Poor recommendations will earn no points.

The following 2 categories will be rated by an admissions panel of 6 Trident Technical College staff members. Panel members will be made up of 2 engineering technology faculty, one admissions officer, the FACET Project Director, the Career Development Officer, and one counselor who is co-chairperson of the nurture group.

Written Statement: A maximum of 4 points can be earned. Each student must submit a statement explaining "why you would like to participate in the FACET program" and including "any educational goals you may have set for yourself beyond high school." This statement will be rated by the admissions panel on a scale of 0 to 4. Those students who seem well-motivated, enthusiastic about the program, and likely to attend TTC as an engineering technology student may earn the maximum 4 points.

Personal Interview: A maximum of 6 points can be earned. Each applicant will be interviewed by 2 members of the admissions panel who will assess her qualifications using the same standards as outlined in the "Written Statement" section.

By this procedure a maximum of 22 points could be earned by an applicant. A minimum of 15 points must be earned for admission into the program. The top 50 point earners in each class will be admitted into the program. In the event that less than 50 students achieve a score of 15 or more, the standard still will be mainained and there will be fewer participants in the program.

APPENDIX D

FACET SUMMER STUDENTS

CATEGORY	NUMBER	PERCENTAGE
Juniors	50	60%
Seniors	31	37%
Graduates	3	4%
TOTAL	84	
Black	35	42%
White	47	56%
Oriental	2	2%
TOTAL	84	
Math 054	10	12%
Math 090	24	29%
Math 100	24	29%
No Math	26	31%
TOTAL	84	

APPENDIX E

FACET SPEAKERS

	NAME	JOB	EMPLOYER
1.	Joyce Austell	Mechanical Technician	Charleston Naval Shipyard
2.	Kathleen Boone	Mechanical Technician	Cummins Engine Company
3.	Susan Boulware	Electrical Engineer	Southern Bell
4.	Jan Brown	Personnel Manager	Haarman & Reimer Corp.
5.	Harriet Cochran	Personnel Technician	Dupont Company
6.	Barbara Demarco	Personnel Manager	Cummins Engine Company
7.	Jean Driscoll	Systems Analyst	Dupont Company
8.	Gail Ford	Civil Technician	Corps of Engineers
9.	Patricia Franklin	Mechanical Engineer	Cummins Engine Company
10.	Margaret Hart	EEOC Coordinator	Charleston Naval Shipyard
11.	Sandra Heitzler	Chemist	Verona Division, Mobay Corp.
12.	Mary Hunicutt	Mechanical Technician	Dupont Company
13.	Ann Hunter	Chemist	Westvaco Corp.
14.	Sue Jones	Chemical Technician	Dupont Company
15.	Dolly Killion	Mechanical Technician	Cummins Engine Company
16.	Sherry Leschinsky	Chemical Technician	Verona Division, Mobay Corp.
17.	Agnes Manning	Chemical Technician	Westvaco Corp.
18.	Gail Stout	Chemist	Westvaco Corp.

FILMS

	TITLE	SUPPLIER
1.	The Prize Is Right	Boston YWCA
2.	The Job Game	Boston YWCA
3.	A Piece of the Action	Georgia Institute of Technology
4.	Women's Work-Engineering	Georgia Institute of Technology
5.	Women In Engineering	Southern Bell
6.	Deal Me In	Florida Department of Education
7.	Women's Game	Modern Talking Picture Service

INDUSTRIES TOURED

1. Cummings & McCrady Inc.
2. Cummins Engine Company
3. Dupont Company
4. International Business Machines Inc.
5. Liollio Associates Ltd.
6. Mobil Chemical Company
7. Polaris Missile Facility
8. Robert Bosch Corp.
9. Santee Cooper Company
10. Sigma Engineers Inc.
11. Trident Technical College Compter Center
12. Uniroyal Inc.
13. Verona Division, Mobay Corp.
14. Water Treatment Facility, Hanahan
15. Westvaco Corp.

APPENDIX F

FACET Careers in Engineering Technology Schedule

Group 5B

DATE	TIME	ACTIVITY	PLACE
6/19/78	8:00 - 10:00	Orientation/Campus Tour	Room 287
	10:00 - 12:00	Problem Solving Laboratory	Room 751
6/20/78	8:00 - 10:00	Industry Tour	
	10:00 - 12:00	Problem Solving Laboratory	Room 751
6/21/78	8:00 - 10:00	Industry Tour	
	10:00 - 12:00	Problem Solving Laboratory	Room 751
6/22/78	8:00 - 10:00	Industry Tour	
	10:00 - 12:00	Problem Solving Laboratory	Room 751
6/26/78	8:00 - 10:00	Industry Speaker and Film	Room 287
	10:00 - 12:00	Problem Solving Laboratory	Room 751
6/27/78	8:00 - 10:00	Architectural Engineering Technology Laboratory	Room 752
	10:00 - 12:00	Problem Solving Laboratory	Room 751
6/28/78	8:00 - 10:00	Architectural Engineering Technology Laboratory	Room 752
	10:00 - 12:00	Problem Solving Laboratory	Room 751
6/29/78	8:00 - 10:00	Communications Laboratory	Room 109
	10:00 - 12:00	Problem Solving Laboratory	Room 751
7/03/78	8:00 - 10:00	Industry Tour	
	10:00 - 12:00	Architectural Engineering Technology Laboratory	Room 752
7/04/78		HOLIDAY	
7/05/78	8:00 - 10:00	Industry Tour	
	10:00 - 12:00	Measurement Laboratory	Room 107
7/06/78	8:00 - 10:00	Industry Tour	
	10:00 - 12:00	Architectural Engineering Technology Laboratory	Room 752

DATE	TIME	ACTIVITY	PLACE
7/10/78	8:00 - 10:00	Mechanical Engineering Technology Laboratory	Room 712
	10:00 - 12:00	Chemical Engineering Technology Laboratory	Room 773
7/11/78	8:00 - 10:00	Mechanical Engineering Technology Laboratory	Room 712
	10:00 - 12:00	Chemical Engineering Technology Laboratory	Room 773
7/12/78	8:00 - 10:00	Mechanical Engineering Technology Laboratory	Room 712
	10:00 - 12:00	Chemical Engineering Technology Laboratory	Room 773
7/13/78	8:00 - 10:00	Mechanical Engineering Technology Laboratory	Room 712
	10:00 - 12:00	Chemical Engineering Technology Laboratory	Room 773
7/17/78	8:00 - 10:00	Electrical Engineering Technology Laboratory	Room 570
	10:00 - 12:00	Electrical Engineering Technology Laboratory	Room 570
7/18/78	8:00 - 10:00	Electronics Engineering Technology Laboratory	Room 580
	10:00 - 12:00	Electronics Engineering Technology Laboratory	Room 580
7/19/78	8:00 - 10:00	Measurement Laboratory	Room 751
	10:00 - 12:00	Industry Speaker and Film	Room 287
7/20/78	8:00 - 10:00	Communications Laboratory	Room 109
	10:00 - 12:00	Industry Tour	
7/24/78	8:00 - 10:00	Small Engine Laboratory	Room 823
	10:00 - 12:00	Measurement Laboratory	Room 107
7/25/78	8:00 - 10:00	Small Engine Laboratory	Room 823
	10:00 - 12:00	Industry Tour	
7/26/78	8:00 - 10:00	Small Engine Laboratory	Room 823
	10:00 - 12:00	Communications Laboratory	Room 109
7/27/78	8:00 - 10:00	Small Engine Laboratory	Room 823
	10:00 - 12:00	Industry Tour	

DATE	TIME	ACTIVITY	PLACE
7/31/78	8:00 - 10:00	Industry Speaker and Film	Room 107
	10:00 - 12:00	Civil Engineering Technology Laboratory	Room 737
8/01/78	8:00 - 10:00	Communications Laboratory	Room 109
	10:00 - 12:00	Civil Engineering Technology Laboratory	Room 737
8/02/78	8:00 - 10:00	Physics Laboratory	Room 777
	10:00 - 12:00	Civil Engineering Technology Laboratory	Room 737
8/03/78	8:00 - 10:00	Physics Laboratory	Room 777
	10:00 - 12:00	Civil Engineering Technology Laboratory	Room 737
8/07/78	8:00 - 10:00	Physics Laboratory	Room 777
	10:00 - 12:00	Machine Tool Laboratory	Room 825
8/08/78	8:00 - 10:00	Physics Laboratory	Room 777
	10:00 - 12:00	Machine Tool Laboratory	Room 825
8/09/78	8:00 - 10:00	Data Gathering Laboratory	Room 777
	10:00 - 12:00	Machine Tool Laboratory	Room 825
8/10/78	8:00 - 10:00	Data Gathering Laboratory	Room 777
	10:00 - 12:00	Machine Tool Laboratory	Room 825

APPENDIX G

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REMEDIAL MATHEMATICS COURSES

FACET PROGRAM

MAT 054 Math Essentials is a course intended to prepare students to enter particular curricula. The course may include any or all of the following topics, depending upon the individual student: arithmetic percent, measurement, elementary algebra, and geometry.

MAT 090 Introductory Algebra covers the following topics: number theory, operations with integers and fractions, algebraic expressions, equations, word problems, operations with polynomials, quadratic equations, rational expressions and introduction to systems of linear equations. This course is geared to students with little or no previous experience with the study of Algebra.

MAT 100 Algebra Fundamentals is a course in fundamental laws of mathematics, including numerical and algebraic operations, fractions, and factoring with special emphasis in applying mathematics to problem-solving basic verbal statements.

APPENDIX H

TRIDENT TECHNICAL COLLEGE

WOMEN ENROLLED IN ENGINEERING TECHNOLOGY

CURRICULUM	SPRING '77	SUMMER '77	FALL '77	WINTER '77	SPRING '78	SUMMER '78
Architectural	1 5%	4 21%	8 18%	13 24%	14 24%	10 27%
Chemical	11 30%	5 26%	23 43%	24 49%	24 50%	10 36%
Civil	4 6%	5 10%	10 11%	8 8%	10 11%	8 14%
Electrical	0 0%	2 3%	3 3%	2 2%	4 5%	4 8%
Electronics	8 5%	3 3%	5 3%	8 5%	8 5%	7 5%
Mechanical	9 7%	4 5%	7 6%	8 6%	8 7%	9 10%
General	2 12%	1 7%	6 20%	9 29%	5 22%	3 43%
TOTAL	38 6%	26 7%	62 9%	72 13%	74 12%	51 13%

APPENDIX I

PAGES 62-72 OF THIS DOCUMENT WERE REMOVED PRIOR TO ITS BEING SUBMITTED TO THE ERIC DOCUMENT REPRODUCTION SERVICE BECAUSE THEY WOULD NOT REPRODUCE IN MICROFICHE.

APPENDIX J

FACET STUDENT SURVEY SUMMARY

Number of respondents: 66 (88% of those completing the summer program)

Number of respondents returning to high school: 40

Number of respondents graduated from high school: 26

First heard about FACET through
- Project Director: 47
- a friend: 6
- a newspaper article: 4
- a teacher: 3
- mother: 3
- radio ad: 1
- television ad: 0

FACET course rated
- excellent: 47
- good: 15
- fair: 0
- poor: 0
- very poor: 0

Felt 8 weeks was
- the right length of time for the course: 48
- too long for the course: 9
- too short for the course: 8

Felt 4 hours per day was
- the right length of time for the course: 59
- too long for the course: 3
- too short for the course: 2

Felt FACET course should include tests, homework, grades: 31
should not include tests, homework, grades: 34

Before FACET began were planning to study engineering or engineering technology: 17
were not planning to study engineering or engineering tech. 48

Now plan to study engineering or engineering technology:
- yes: 48
- maybe: 7
- no: 10

Field of interest in engineering or engineering technology:
(Those respondents who named two choices are counted twice.)

- Architectural: 12
- Chemical: 8
- Civil: 2
- Electrical: 7
- Electronics: 18
- Mechanical: 7
- Other: 3
- Undecided: 11

Future plans:		
	enroll at TTC in 1978:	14
	enroll at TTC in 1979:	17
	enroll at 4-year college in 1978:	7
	enroll at 4-year college in 1979:	18
	enlist in Navy:	1
	undecided:	5

The respondents were overwhelmingly in favor of including each section of the course when it is offered again next year. Results are tallied below.

ACTIVITY	STRONGLY RECOMMENDED	RECOMMEND W/CHANGES	DO NOT REPEAT
Architectural ET lab	58	7	0
Chemical ET lab	62	3	0
Civil ET lab	56	7	0
Electrical ET lab	62	3	0
Electronics ET lab	63	1	0
Mechanical ET lab	48	13	2
Physics & data gathering labs	50	15	0
Problem solving lab	57	8	0
Small engine lab	62	4	0
Measurement lab	60	5	0
Machine Tool lab	57	7	0
Communications lab	62	3	0
Industry speakers	54	10	0
Films	55	9	1
Industry tours	58	7	0

Total do not always equal 66 because some respondents missed one or more sections and therefore could not rate them.

SELECTED COMMENTS - STUDENT SURVEY

"The program was really worthwhile. I enjoyed being able to work with machines. I like doing things with my hands."

"I believe my summer has been well spent."

"I feel the teachers should maybe let us do more things and not be afraid just because we are girls."

"I felt that the lab that was really set up the best (well prepared) was the electrical/electronics. We were continually doing things."

"Some of the films seemed imature. If they were on a higher level I would recommend more of them."

"I have complained about getting up in the mornings, but I've realized that I have to give something in order to get something out of it. I would also like to say that I have really enjoyed it and hope that the program will continue, because I have a younger sister who is interested in this type of program, and maybe one day my little girl will become part of this program." (This student had a baby when she was 15 years old. She plans to major in engineering technology at Trident in 1979.)

"The tours were fun. They were full of interesting people."

"I really learned a lot of things this summer from the FACET program and it helped me make a decision concerning my future goals. I realize now that engineering isn't as hard as I anticipated and that I can survive in the field."

"I have had more fun in this program than I have at any other school."

"The tours definitely added to the interest of FACET ."

"I really liked the learning experiences and the way pressure was not put on us to learn. I met a tremendous amount of friends and definitely think the program should be continued next summer."

FACET FACULTY SURVEY SUMMARY

Number of respondents: 10 (83% of those teaching Careers in ET)

FACET program rated	excellent:	6
	good:	4
	fair:	0
	poor:	0
	very poor:	0

Felt 8 weeks was	the right length of time for the course:	7
	too long for the course:	3
	too short for the course:	0

Felt two hour sessions were	good blocks of time:	10
	too long:	0
	too short:	0

Felt that tests, homework, and grades	should be included:	0
	should not be included:	10

Felt the money well spent and project	should be replicated:	6
	mostly well spent & project should be replicated:	2
	not well spent & project should not be replicated:	1

SELECTED COMMENTS - FACULTY SURVEY

"Why not also include males?"

"Boredom began to set in during the last weeks - shorter program could help this."

"I would think this program would best be suited to women who were a tad bit more mature. The high school girls did not seem to have much interest in planning for the rest of their lives."

"Students should be advised as to manner of dress (no shorts or sandals in lab)."

"The great number of different classes was very good."

"I think that the opportunity for staff to participate in the industry tours is a good one. Seems we can learn so much from these experiences that could help us in our job."

APPENDIX K

STAFF MEMBERS WHO CONTRIBUTED TO EGR 105

CAREERS IN ENGINEERING TECHNOLOGY

	NAME	TITLE	CONTRIBUTION
1.	Roy Brotherton	ET Faculty	Taught Mechanical ET lab
2.	Alison Caughman	Project Director	Planned & taught measurement lab
3.	Dave Cox	ET Faculty	Planned & taught Chemical ET lab
4.	Jon Craig	ET Faculty	Planned & taught physics & data gathering lab
5.	Dave Cresswell	ET Faculty	Planned & taught Civil ET lab
6.	Pete Dambaugh	IT Faculty	Planned small engine lab
7.	George Fitzmaurice	IT Faculty	Planned machine tool lab
8.	Martin Hoogenboom	IT Faculty	Taught machine tool lab
9.	Donna Jarrell	ET Student	Spoke at FACET Orientation
10.	Jim Jeffries	ET Faculty	Planned mechanical ET lab
11.	Badr. Labib	ET Faculty	Planned & taught Architectural ET lab
12.	Kay Maves	A & S Faculty	Planned & taught problem solving lab
13.	Peggy McDaniel	Registrar	Planned orientation
14.	John McGreal	Dean, ET	Spoke at orientation & closing ceremony
15.	Kathy Newman	Counselor	Planned & taught communications lab (assertiveness training)
16.	Jac Powell	Admissions Director	Planned orientation
17.	Robert Tepper	ET Faculty	Planned & taught electronics ET lab
18.	Charles Ward	TTC President	Spoke at orientation
19.	Don Whistler	ET Faculty	Planned & taught electrical ET lab
20.	Darrel Wyrick	IT Faculty	Taught small engine lab

APPENDIX L

FEMALE ENGINEERING TECHNOLOGY GRADUATES

1978

Deborah Berry - Nuclear Engineering Technology - Not seeking employment

Deborah Buckley - Chemical Engineering Technology - Duke Power Company

Cheryl Kirkland - Chemical Engineering Technology - Westvaco

Deborah Lowman - Civil Engineering Technology - Charleston Engineers

Patricia Rean - Chemical Engineering Technology - Not seeking employment

Florance Robinson - Chemical Engineering Technology - Currently seeking employment

Julia Thompson - Charleston Naval Shipyard

APPENDIX M

REASONS FOR DROPPING EGR 105

CAREERS IN ENGINEERING TECHNOLOGY

NUMBER	REASON
4	Obtained full-time employment
2	Personal reasons
2	Moved from area
1	Took another summer school course to graduate early
1	Illness
1	Family pressures to leave the program